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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,136	07/15/2003	Roger T. Simpson	BW-DKT00010A	8461
32175	7590	11/19/2004	EXAMINER	
BORGWARNER INC. POWERTRAIN TECHNICAL CENTER 3800 AUTOMATION AVENUE, SUITE 100 AUBURN HILLS, MI 48326-1782			CORRIGAN, JAIME W	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,136

Applicant(s)

SIMPSON ET AL.

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Amendment filed on 19 August 2004. Claims 1, 8, 12-13 have been amended. Overall, claims 1-13 are pending in this application. Some of the arguments with respect to the references applied in the first Office Action were deemed persuasive, however, a new Non-final rejection is set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Runnels (PN 5,882,025).

Regarding claim 1 Runnels discloses at least two groups of toothlike projections including a first group (See Figure 1 (Tooth (17) and directly opposing (180°) tooth on other end of rhomboid)) having a first distance to the center of the wheel, and a second group (See Figure 1 (Tooth (20) and opposing (180°) tooth on other side of rhomboid) having a second distance to the center of the wheel, the first distance being different (See Column 3 Lines 38-58) from the second distance.

Regarding claim 2 Runnels discloses the at least two groups further comprising a third group (See Figure 1 Tooth (21)) and tooth 180° opposite it on rhomboid) having a third unique distance to the center of the wheel (See Figure 5).

Regarding claim 3 Runnels discloses the timing gear (See Figure 1 (10)) is concentrically coupled to the at least one cam shaft (See Figure 2 (31)).

Regarding claim 4 Runnels discloses the timing gear (See Figure 1 (10)) is concentrically coupled to a crank shaft (See Figure 2 (31)).

Regarding claim 5 Runnels discloses the timing gear (See Figure 1 (10)) is mounted upon a phaser (See Figure 2 (31)).

Regarding claim 6 Runnels discloses the timing gear is engaging an engine timing chain (See Figure 2 (33)), said timing gear having various toothlike (See Figure 1 (21), (20)) projections and grooves (See Figure 1 (13)) arranged on a wheel rim (See Figure 1 (10)) of a wheel for engaging the links of a timing chain.

Regarding claim 7 Runnels discloses the timing gear (See Figure 1 (10)) is engaging an engine timing belt (See Figure 2 (33)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tscheplak (EP325724A).

Regarding claim 8 Tscheplak discloses a resonator (See Figure 1 (1)) positioned upon the at least one cam shaft (See Abstract), the resonator including at least one mass (See Figures 1, 2 (1)) and at least one elastic (See Figure 1 (26)) element; whereby torsional oscillation of the at least one cam shaft at a predetermined engine speed range is increased (See Abstract Lines 7-10).

Note: With regard to claim 8, although Tscheplak discloses a crankshaft and not a camshaft, it would have been obvious to one having ordinary skill in the art to apply the resonator to a camshaft since a camshaft and crankshaft are similar devices that work in conjunction with one another in an internal combustion engine.

Regarding claim 9 Tscheplak discloses the at least one mass comprising an annular metal member (See Figures 1-2, (1), (2)).

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Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tscheplak (EP325724A) as applied to claim 8 above, and further in view of Niemic et al. (PN 5,163,872).

Tscheplak discloses the invention as recited in claim 8 above, however fails to disclose the at least one elastic element comprising annular rubber member attached onto the at least one camshaft.

Niemic teaches that it is conventional in the art to utilize the at least one elastic element (See Figure 4 (72)) comprising annular rubber member attached onto the at least one camshaft (See Figure 4 (68)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the rubber member taught by Niemic in the Tscheplak device since it would allow for increased oscillation of the mass.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tscheplak (EP325724A) as applied to claim 8 above, and further in view of Venturi et al. (PN 5,363,819).

Tscheplak discloses the invention as recited in claim 8 above further discloses at least one elastic element comprising a spring (See Figure 2 (26)) with a second end connected to the at least one mass (See Figure 1 (1)).

Tscheplak fails to disclose at least one elastic element comprising at least one spring having a first end attached to the at least one camshaft.

Venturi et al. teaches that it is conventional in the art to utilize at least one element (See Figure 2 (Connecting piece between (21a) and (25)) comprising a rigid connection with a second end connected to the at least one mass (See Figure 2 (25)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the rigidly connected mass taught by Venturi in the Tscheplak device since it would help control torque oscillations of the camshaft.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tscheplak (EP325724A) as applied to claim 8 above, and further in view of Sekiya et al. (PN 6,332,439).

Tscheplak discloses the invention as recited in claim 8 above, however fails to disclose an oil pressure actuated system.

Sekiya et al. teaches that it is conventional in the art to utilize an oil (See Figure 2 (40), Column 1 Lines 21-32) pressure actuated system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the oil pressure actuated system taught by Sekiya in the Tscheplak device since it would improve timing control.

Response to Arguments

Applicant's arguments filed 19 August 2004 have been fully considered but they are not persuasive.

With regard to Applicant's argument that the Tscheplak reference doesn't teach a variable cam timing system as recited in claim 8. The Examiner agrees that Tscheplak doesn't disclose a variable cam timing system. The Examiner feels that claim 8 has been given its broadest reasonable interpretation since the limitation of a variable cam timing system is included in the preamble only and has not been given any patentable weight.

With regard to Applicant's argument that the Tscheplak reference includes two resonators and not one. The Examiner agrees that Tscheplak discloses two resonators. The Tscheplak reference discloses multiple resonators to compensate for multiple frequency ranges. It is the Examiner's position that since the resonators disclosed in Tscheplak are capable of working independently of one another any one of them could be viewed as a single resonator.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitano (PN 4,036,073), Karlyn et al. (PN 5,419,213), Steele et al. (PN 4,911,032), Takami (PN 4,685,348), Simpson et al. (PN 5,875,752), Belanger et al. (PN 5,713,092) disclose similar cam devices.

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Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose Crystal City telephone number is (703) 308-2639 and the Carlyle telephone number (as of 11-23-04) is (571) 272-4858. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan

Jaime Corrigan
Patent Examiner

November 15, 2004

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Thomas Denion
THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700